

WHAT IS CLAIMED IS:

1. A method of manufacturing at least one semiconductor device on a substrate having an effective device area surrounded by a peripheral area, said at least one semiconductor device being formed in the effective device area, the peripheral area extending to an outer periphery of the substrate, the method comprising:

forming a dielectric film entirely covering the substrate;

forming a resist pattern on the dielectric film, entirely covering the dielectric film in the effective device area and leaving at least part of the dielectric film exposed in the peripheral area;

etching the exposed part of the dielectric film;

removing the resist pattern; and

planarizing the dielectric film by chemical-mechanical polishing after the resist pattern has been removed.

2. The method of claim 1, wherein said etching is performed by wet etching.

3. The method of claim 1, wherein the resist pattern extends a certain distance from the effective device area into the peripheral area, entirely covering the peripheral area out to said certain distance, and exposes all parts of the dielectric film beyond said certain distance from the effective device area.

4. The method of claim 3, wherein the resist pattern extends substantially five micrometers into the peripheral area.

5. The method of claim 1, wherein the resist pattern

extends a certain distance from the effective device area into the peripheral area, entirely covering the peripheral area out to said certain distance, and is patterned to partly expose the dielectric film beyond said certain distance from the effective device area.

6. The method of claim 5, wherein the resist pattern extends into and entirely covers the peripheral area for substantially five micrometers.

7. The method of claim 1, wherein the dielectric film covers a wiring layer formed on the substrate.

8. The method of claim 7, wherein the dielectric film has an uneven surface topography with a base level disposed in a reference plane in the effective device area, and said etching etches the exposed part of the dielectric film in the peripheral area substantially down to the reference plane.

9. The method of claim 1, wherein the dielectric film fills isolation trenches formed in the effective device area of the substrate.

10. The method of claim 9, wherein parts of the substrate exterior to the isolation trenches are covered by a nitride film underlying the dielectric film, and the nitride film functions as an etching stopper in said etching.

11. The method of claim 1, wherein the resist pattern is formed with a single lithography exposure.